

Notice of Allowability

Application No.

10/617,469

Examiner

Charles Chow

Applicant(s)

KRISHNAMURTHI, KATHIRAVAN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 6/28/2006.
2. ☒ The allowed claim(s) is/are 25-43.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Detailed Action

1. This office action is for amendment received on 6/28/2006.

Allowable Subject Matter

2. The following is an examiner's statement of reasons for allowance:

Claims 25-43 are allowable over the prior art of record. The prior arts fail to teach the allowable features, singly, particularly, or in combination.

Applicant has canceled the rejected claims 1-24, and claim 25 was indicated to allowable in the previous office action mailed on 5/31/2006.

Applicant added new claims 33-43 having substantially identical features as those in the allowable claim 25, and having radio instead of receiver or transmitter, the down conversion as well as up conversion [applicant's amendment, page 6, 6/28/2006].

Claims 25-43 are allowable over the prior art of record. The prior arts fail to teach the allowable features, singly, particularly, or in combination.

The prior arts fail to teach the features in independent claims 25, 33, for an amplifier having an gain variable with the amplitude of a signal applied to the amplifier, together with the amplifier responding to a signal comprising said first periodic signal and leakage of said second periodic signal by providing a greater gain to said first periodic signal than to said leakage of said second periodic signal, and responding to a signal comprising said second period signal and leakage of said first periodic signal by providing a greater gain to said second period signal than to said leakage of said first periodic signal, of an receiver, having a **first LO source** to generate a first periodic signal;

a second LO source to generate a second periodic signal;

a first switching element to selectively coupled said first periodic signal to said amplifier input when said first switching element is turned on; and

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a second switching element to selectively coupled said second periodic signal to said amplifier input when said second switching element is turned on;

said first and second switching elements allowing leakage of said first and second periodic signals, respectively, to said amplifier input when said first and second switching elements are off, respectively;

The dependent claims 26-32, 34-43 are also allowable due to their dependency upon the independent claims and the having additional claimed features.

The closest prior art to **Nakano (US 5,960,334)** teaches the switched local oscillator LO signals from source 4, 5 [Fig. 1] utilizing switch 23 having off isolation, and amplifier to provide larger gain for selected LO frequency and small gain for the small unselected leakage signal from switch 23 [col. 4, lines 2-40 & col. 5, lines 20-35],

but fails to teach the above allowable features, the amplifier having an gain variable with the amplitude of a signal applied to the amplifier, together with, **providing a greater gain to said first periodic signal than to said leakage of said second periodic signal, and responding to a signal comprising said second period signal and leakage of said first periodic signal by providing a greater gain to said second period signal than to said leakage.**

Wong et al. (US 6,952,572 B2) teaches the limiter 50, Fig. 7, enabled for high side, low side local oscillator signal injection [col. 4, line 52 to col. 5, line 22], for removing unwanted image signal [col. 1, lines 31-48], the differential pair has predetermined tail current flowing throw resistors 534, 535, controlled by current source 530, 531, but fails to teach the above allowable features, the amplifier having an gain variable with the amplitude of a signal applied to the amplifier, together with, **providing a greater gain to said first periodic signal than to said leakage of said second periodic signal, and responding to a signal**

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comprising said second period signal and leakage of said first periodic signal by providing a greater gain to said second period signal than to said leakage.

Other prior arts in below has been considered, but they fail to teach the above allowable features.

Jin et al. (US 6,904,266 B1) teaches the a transmitter 20 comprising a second switching element 74 to selectively coupled said second local oscillator LO2 to an amplifier A3 or A4, col. col. 7, lines 1-20, Fig. 7], in order to attenuate the signal leakage [col. 2, lines 34-40].

Other prior arts are considered also, but they fail to teach the allowable features above. They are **Pierce (US 4006,353)**, **Seitner (US 6,973,188 B1)**, **Persico (US 5,574,755)**, **Pengelly et al. (US 5,898,913)**, **Dvorak (US 2004/0056,726 A1)**, **Lin *US 2004/0002,320 A1)**, **Kobayashi (Us 6,163,222)**, **Yamao et al. (US 5,231,632)**.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

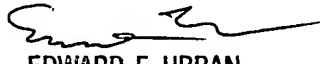
3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Chow whose telephone number is (571) 272-7889. The examiner can normally be reached on 8:00am-5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public

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PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charles Chow *C.C.*

July 7, 2006.


EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600